

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 02-248671

(43)Date of publication of application : 04.10.1990

(51)Int.Cl.

F04B 43/04

F04B 9/00

(21)Application number : 01-069864

(71)Applicant : MISUZU ERII:KK

(22)Date of filing : 20.03.1989

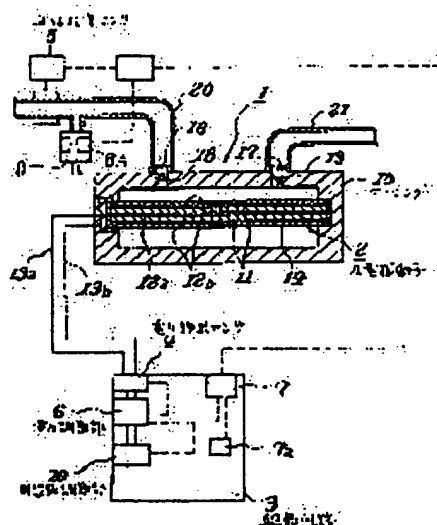
(72)Inventor : OKUYAMA HIDENORI
SATO TAKEMASA

(54) QUANTITATIVE FORCE FEED METHOD OF FLUID

(57)Abstract:

PURPOSE: To conduct highly efficient and highly precise force feed by detecting the input electric power of the piezoelectric vibrator of a piezoelectric pump and the viscosity of a liquid by respective sensors, and automatically controlling at least two of voltage regulation, frequency regulation, and regulation of diluted solution of the liquid.

CONSTITUTION: A piezoelectric element 2 having a piezoelectric film 11 and a film electrode 12a is fixed to a casing 15, and an intake port 16 and a discharge port 17 are provided to form a piezoelectric pump 1. The piezoelectric pump is driven by a driving circuit 3, and the outputs detected by a power detecting sensor 4 and a viscosity sensor 5 are inputted to a voltage regulating part 6 and a viscosity setting equipment 7a. These are compared with set values preliminarily set according to the flow rate, whereby the voltage is regulated and the diluted solution regulator of a diluted solution feed part 8 is operated. At least two of voltage, frequency, and diluted solution regulations are automatically controlled, and quantitative force feed of liquid can be conducted at high efficiency and high accuracy.



LEGAL STATUS

Best Available Copy

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office